

10/ 820,200

=> d his

(FILE 'HOME' ENTERED AT 10:24:31 ON 12 JAN 2006)

FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS,
LIFESCI' ENTERED AT 10:25:20 ON 12 JAN 2006

L1 53363 S ALPHA (W) AMYLASE?
L2 352188 S FUNGAMYL OR FUNGAL
L3 585 S L1(A)L2
L4 140 S (THREMOSTABILITY OR STABILITY OR "PH") AND L3
L5 92 DUP REM L4 (48 DUPLICATES REMOVED)
E BISGARD H/AU
E BISGARD-FRANTZEN H/AU
E FRANTZEN HENRIK/AU
L6 3 S E4
E SVENDSEN A/AU
L7 412 S E3
E PEDERSEN S/AU
L8 1382 S E3
L9 1795 S L6 OR L7 OR L8
L10 7 S L3 AND L9
L11 4 DUP REM L10 (3 DUPLICATES REMOVED)

=>

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NEWS 5 DEC 14 2006 MeSH terms loaded for MEDLINE file segment of TOXCENTER
NEWS 6 DEC 14 CA/CAplus to be enhanced with updated IPC codes
NEWS 7 DEC 21 IPC search and display fields enhanced in CA/CAplus with the
IPC reform
NEWS 8 DEC 23 New IPC8 SEARCH, DISPLAY, and SELECT fields in USPATFULL/
USPAT2

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CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
AND CURRENT DISCOVER FILE IS DATED 19 DECEMBER 2005.
V8.0 USERS CAN OBTAIN THE UPGRADE TO V8.01 AT
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FILE 'HOME' ENTERED AT 10:24:31 ON 12 JAN 2006

=> file medline embase biosis biotechds scisearch hcapsplus ntis lifesci
COST IN U.S. DOLLARS SINCE FILE TOTAL
ENTRY SESSION
FULL ESTIMATED COST 0.21 0.21

FILE 'MEDLINE' ENTERED AT 10:25:20 ON 12 JAN 2006

FILE 'EMBASE' ENTERED AT 10:25:20 ON 12 JAN 2006
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FILE 'LIFESCI' ENTERED AT 10:25:20 ON 12 JAN 2006
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=> s alpha (w) amylase2
2 IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
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=> s alpha (w) amylase?
L1 53363 ALPHA (W) AMYLASE?

=> s fungamyl or fungal
L2 352188 FUNGAMYL OR FUNGAL

=> s l1(a)l2
L3 585 L1(A) L2

=> s (thremostability or stability or "pH") and l3
L4 140 (THREMOSTABILITY OR STABILITY OR "PH") AND L3

=> dup rem l4
PROCESSING COMPLETED FOR L4
L5 92 DUP REM L4 (48 DUPLICATES REMOVED)

=> d 1-92 ibib

L5 ANSWER 1 OF 92 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2006-00921 BIOTECHDS
TITLE: Producing a fermentation product (preferably ethanol) from a
starch-containing material, comprises treatment with
alpha-amylase, and then alpha-glucosidase, before
fermentation with a fermenting organism;
involving fermentation, alpha-amylase and
alpha-glucosidase for use as fuel
AUTHOR: BHARGAVA S; FRISNER H; BISGARD-FRANTZEN H; TAMS J W
PATENT ASSIGNEE: NOVOZYMES NORTH AMERICA INC; NOVOZYMES AS
PATENT INFO: WO 2005113785 1 Dec 2005
APPLICATION INFO: WO 2005-US16390 11 May 2005
PRIORITY INFO: US 2004-633293 3 Dec 2004; US 2004-570727 13 May 2004
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2006-010609 [01]

L5 ANSWER 2 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:341499 HCAPLUS

DOCUMENT NUMBER: 142:391341
TITLE: Manufacture of bread from wheat flour and grain
INVENTOR(S): Malkina, V. D.; Markitanova, O. A.; Krivov, S. I.
PATENT ASSIGNEE(S): Russia
SOURCE: Russ., No pp. given
CODEN: RUXXE7
DOCUMENT TYPE: Patent
LANGUAGE: Russian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RU 2249960	C1	20050420	RU 2004-110374	20040407
PRIORITY APPLN. INFO.:			RU 2004-110374	20040407

L5 ANSWER 3 OF 92 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2005346848 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15998153
TITLE: Impact of *Fusarium culmorum* on the polysaccharides of wheat flour.
AUTHOR: Wang Jinhua; Pawelzik Elke; Weinert Joachim; Wolf Gerhard A
CORPORATE SOURCE: Institute of Agricultural Chemistry, University of Gottingen, Carl-Sprengel-Weg 1, D-37075 Gottingen, Germany.
SOURCE: Journal of agricultural and food chemistry, (2005 Jul 13) 53 (14) 5818-23.
PUB. COUNTRY: Journal code: 0374755. ISSN: 0021-8561.
DOCUMENT TYPE: United States
LANGUAGE: Journal; Article; (JOURNAL ARTICLE)
FILE SEGMENT: English
ENTRY MONTH: Priority Journals
ENTRY DATE: 200508
Entered STN: 20050707
Last Updated on STN: 20050818
Entered Medline: 20050817

L5 ANSWER 4 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:328171 HCAPLUS
DOCUMENT NUMBER: 143:77038
TITLE: Stability of 5-methyltetrahydrofolate in frozen fresh fruits and vegetables
AUTHOR(S): Phillips, Katherine M.; Wunderlich, Kelli M.; Holden, Joanne M.; Exler, Jacob; Gebhardt, Susan E.; Haytowitz, David B.; Beecher, Gary R.; Doherty, Robert F.
CORPORATE SOURCE: Department of Biochemistry, Virginia Tech., Blacksburg, VA, 24061-0308, USA
SOURCE: Food Chemistry (2005), 92(4), 587-595
PUBLISHER: CODEN: FOCHDJ; ISSN: 0308-8146
DOCUMENT TYPE: Elsevier B.V.
LANGUAGE: Journal
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 5 OF 92 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2005-04822 BIOTECHDS
TITLE: Producing soluble starch hydrolysate comprises subjecting aqueous granular starch slurry below initial gelatinization temperature of granular starch to action of Glycoside Hydrolase Family13 enzyme, and fungal amylase; fungus alpha-amylase, beta-amylase or glucoamylase-catalyzed starch hydrolysis for use in high fructose starch-based syrup, ethanol or sweetener production

AUTHOR: VIKSOE-NIELSEN A; ANDERSEN C; PEDERSEN S; HJORT C
PATENT ASSIGNEE: NOVOZYMES AS
PATENT INFO: WO 2004113551 29 Dec 2004
APPLICATION INFO: WO 2004-DK456 25 Jun 2004
PRIORITY INFO: DK 2003-1568 24 Oct 2003; DK 2003-949 25 Jun 2003
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2005-075255 [08]

L5 ANSWER 6 OF 92 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2004-10114 BIOTECHDS
TITLE: Novel hemicellulase NBE012, NBE021, NBE022, NBE064, NBE075 or NBE092 derived from *Aspergillus niger*, useful for preparing dough and/or baked product; involving vector-mediated gene transfer and expression in host cell for use in *Aspergillus niger* infection diagnosis
AUTHOR: FOLKERS U; FRITZ A; GERHARD B; KLUGBAUER S; SPREAFICO F; WAGNER C; BOER D L; MEIMA R B
PATENT ASSIGNEE: DSM IP ASSETS BV
PATENT INFO: WO 2004018662 4 Mar 2004
APPLICATION INFO: WO 2003-EP9147 15 Aug 2003
PRIORITY INFO: EP 2002-102298 3 Sep 2002; EP 2002-102152 19 Aug 2002
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2004-226842 [21]

L5 ANSWER 7 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
DUPLICATE 2
ACCESSION NUMBER: 2005:82402 BIOSIS
DOCUMENT NUMBER: PREV200500080559
TITLE: Influence of enzymes on rheological, microstructure and quality characteristics of parotta - an unleavened Indian flat bread.
AUTHOR(S): Prabhasankar, P.; Indrani, D.; Jyotsna, R.; Rao, G. Venkateswara [Reprint Author]
CORPORATE SOURCE: Flour Milling Baking and Confectionery Technol Dept, Cent Food Technol Res Inst, Mysore, Karnataka, 570013, India mbt@cscftri.ren.nic.in
SOURCE: Journal of the Science of Food and Agriculture, (December 2004) Vol. 84, No. 15, pp. 2128-2134. print.
ISSN: 0022-5142 (ISSN print).
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 23 Feb 2005
Last Updated on STN: 23 Feb 2005

L5 ANSWER 8 OF 92 MEDLINE on STN DUPLICATE 3
ACCESSION NUMBER: 2004343485 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15246667
TITLE: Production of fungal alpha-amylase by *Saccharomyces kluyveri* in glucose-limited cultivations.
AUTHOR: Moller Kasper; Sharif Mostafa Z; Olsson Lisbeth
CORPORATE SOURCE: Center for Microbial Biotechnology, BioCentrum-DTU, Building 223, Technical University of Denmark, 2800 Kgs. Lyngby, Denmark.. km@biocentrum.dtu.dk
SOURCE: Journal of biotechnology, (2004 Aug 5) 111 (3) 311-8.
Journal code: 8411927. ISSN: 0168-1656.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200411
ENTRY DATE: Entered STN: 20040713

Last Updated on STN: 20041219
Entered Medline: 20041130

L5 ANSWER 9 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:656930 HCAPLUS
DOCUMENT NUMBER: 139:196392
TITLE: Use of cyclodextrin glycosyltransferase, glucoamylase and α -amylase for generating soluble starch hydrolysates for synthesis of high fructose starch-based syrups, fuel and potable ethanol
INVENTOR(S): Norman, Barrie Edmund; Vikso-Nielsen, Anders; Olsen, Hans Sejr; Pedersen, Sven
PATENT ASSIGNEE(S): Novozymes A/S, Den.
SOURCE: PCT Int. Appl., 40 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003068976	A2	20030821	WO 2003-DK84	20030210
WO 2003068976	A3	20031224		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2474082	AA	20030821	CA 2003-2474082	20030210
EP 1476556	A2	20041117	EP 2003-702374	20030210
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
US 2005107332	A1	20050519	US 2003-504543	20030210
PRIORITY APPLN. INFO.:			DK 2002-227	A 20020214
			DK 2002-1291	A 20020902
			WO 2003-DK84	W 20030210

L5 ANSWER 10 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
DUPLICATE 4
ACCESSION NUMBER: 2004:227284 BIOSIS
DOCUMENT NUMBER: PREV200400227654
TITLE: Scanning electron microscopy, rheological characteristics, and bread-baking performance of wheat-flour dough as affected by enzymes.
AUTHOR(S): Indrani, D.; Prabhasankar, P.; Rajiv, J.; Rao, G.
Venkateswara [Reprint Author]
CORPORATE SOURCE: Flour Milling Baking and Confectionery Technology Dept., Central Food Technological Research Inst., Mysore, 570 013, India
mbt@cscftri.ren.nic.in
SOURCE: Journal of Food Science, (November/December 2003) Vol. 68, No. 9, pp. 2804-2809. print.
CODEN: JFDSAZ. ISSN: 0022-1147.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 28 Apr 2004
Last Updated on STN: 28 Apr 2004

L5 ANSWER 11 OF 92 HCPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:997295 HCPLUS
DOCUMENT NUMBER: 141:102002
TITLE: Heat inactivation of *Aspergillus oryzae*
α-amylase at high and reduced water content
AUTHOR(S): Samborska, K.; Guiavarc'h, Y.; Van Loey, A.;
Hendrickx, M.
CORPORATE SOURCE: Laboratory of Food Technology, Department of Food and
Microbial Technology, Katholieke Universiteit Leuven,
Heverlee, B-3001, Belg.
SOURCE: Mededelingen - Faculteit Landbouwkundige en Toegepaste
Biologische Wetenschappen (Universiteit Gent) (2003),
68(3), 247-250
CODEN: MFLBER; ISSN: 1373-7503
PUBLISHER: Universiteit Gent, Faculteit Landbouwkundige en
Toegepaste Biologische Wetenschappen
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 12 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on
STN DUPLICATE 5
ACCESSION NUMBER: 2003:138235 BIOSIS
DOCUMENT NUMBER: PREV200300138235
TITLE: Effect of alpha-amylases on dough properties during Turkish
hearth bread production.
AUTHOR(S): Dogan, Ismail S. [Reprint Author]
CORPORATE SOURCE: Department of Food Engineering, College of Agriculture,
Yuzuncu Yil University, 65080, Van, Turkey
isdogan@yyu.edu.tr
SOURCE: International Journal of Food Science & Technology,
(February 2003) Vol. 38, No. 2, pp. 209-216. print.
CODEN: IJFTEZ. ISSN: 0950-5423.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 12 Mar 2003
Last Updated on STN: 12 Mar 2003

L5 ANSWER 13 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on
STN DUPLICATE 6
ACCESSION NUMBER: 2004:90622 BIOSIS
DOCUMENT NUMBER: PREV200400092494
TITLE: Pilot scale production of a lager beer from a grist
containing 50% unmalted sorghum.
AUTHOR(S): Goode, Declan L.; Arendt, Elke K. [Reprint Author]
CORPORATE SOURCE: Department of Food Science, Food Technology and Nutrition,
National University, University College Cork, Cork, Ireland
earendt@ucc.ie
SOURCE: Journal of the Institute of Brewing, (2003) Vol. 109, No.
3, pp. 208-217. print.
ISSN: 0046-9750.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 11 Feb 2004
Last Updated on STN: 11 Feb 2004

L5 ANSWER 14 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on
STN DUPLICATE 7
ACCESSION NUMBER: 2003:322683 BIOSIS
DOCUMENT NUMBER: PREV200300322683
TITLE: Optimization of mashing conditions when mashing with
unmalted sorghum and commercial enzymes.
AUTHOR(S): Goode, Declan L.; Halbert, Catherine; Arendt, Elke K.

[Reprint Author]
CORPORATE SOURCE: Department of Food and Nutritional Sciences and National Food Biotechnology Centre, National University of Ireland, University College Cork, Cork, Ireland
e.arendt@ucc.ie
SOURCE: Journal of the American Society of Brewing Chemists, (2003) Vol. 61, No. 2, pp. 69-78. print.
CODEN: JSBCD3. ISSN: 0361-0470.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 9 Jul 2003
Last Updated on STN: 9 Jul 2003

L5 ANSWER 15 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:1006572 HCAPLUS
TITLE: Studies on the production of high maltose syrup
AUTHOR(S): Xu, Yue
CORPORATE SOURCE: Shanghai Office, Y and Y International Tech Co., Shanghai, Peop. Rep. China
SOURCE: ASEAN Food Journal (2003), 12(1), 15-20
PUBLISHER: Universiti Putra Malaysia Press
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 16 OF 92 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2002-17360 BIOTECHDS
TITLE: Producing ethanol from starch-containing material e.g., tubers, roots, whole grain, for use in fuel, by fermentation comprises carrying out a secondary liquefaction step in the presence of a thermostable acid alpha-amylase; alcohol preparation by bacterium or fungus fermentation and enzyme-catalyzed reaction
AUTHOR: VEIT C; FELBY C; FUGLSANG C C
PATENT ASSIGNEE: NOVOZYMES AS; NOVOZYMES NORTH AMERICA INC
PATENT INFO: WO 2002038787 16 May 2002
APPLICATION INFO: WO 2000-DK737 10 Nov 2000
PRIORITY INFO: US 2000-256015 15 Dec 2000
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2002-479793 [51]

L5 ANSWER 17 OF 92 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2002-12965 BIOTECHDS
TITLE: Liquid composition for preparing dough and baked product, comprises enzyme(s), ascorbic acid and polyol(s); use of enzyme mixture in production of dough and baked products such as pizza
AUTHOR: SCHOONEVELD-BERGMANS M E F; RODRIGUEZ ARANDA J
PATENT ASSIGNEE: DSM NV
PATENT INFO: WO 2002026044 4 Apr 2002
APPLICATION INFO: WO 2000-EP10456 28 Sep 2000
PRIORITY INFO: EP 2000-203395 28 Sep 2000
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2002-352096 [38]

L5 ANSWER 18 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:1003933 HCAPLUS
DOCUMENT NUMBER: 140:4376
TITLE: Lipid-protected α -amylase for retardation of staling in baked goods

INVENTOR(S) : Horn, Merritt C.
PATENT ASSIGNEE(S) : USA
SOURCE: U.S. Pat. Appl. Publ., 7 pp., Cont.-in-part of U.S.
Ser. No. 377,678, abandoned.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002058086	A1	20020516	US 2001-921673	20010803
US 6635289	B2	20031021		
PRIORITY APPLN. INFO.:			US 1999-377678	B2 19990819

L5 ANSWER 19 OF 92 MEDLINE on STN DUPLICATE 8
ACCESSION NUMBER: 2002616980 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12374409
TITLE: Measurement of alpha-amylase activity in white wheat flour,
milled malt, and microbial enzyme preparations, using the
Ceralpha assay: collaborative study.
AUTHOR: McCleary Barry V; McNally Marian; Monaghan Dympha; Mugford
David Cbarry@megazyme.com
SOURCE: Journal of AOAC International, (2002 Sep-Oct) 85 (5)
1096-102.
Journal code: 9215446. ISSN: 1060-3271.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200304
ENTRY DATE: Entered STN: 20021011
Last Updated on STN: 20030402
Entered Medline: 20030401

L5 ANSWER 20 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on
STN DUPLICATE 9
ACCESSION NUMBER: 2003:212802 BIOSIS
DOCUMENT NUMBER: PREV200300212802
TITLE: Mashing studies with unmalted sorghum and malted barley.
AUTHOR(S): Goode, Declan L.; Halbert, Catherine; Arendt, Elke K.
[Reprint Author]
CORPORATE SOURCE: Department of Food and Nutritional Sciences, National
University of Ireland, University College Cork, Cork,
Ireland
e.arendt@ucc.ie
SOURCE: Journal of the Institute of Brewing, (2002) Vol. 108, No.
4, pp. 465-473. print.
ISSN: 0046-9750.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 30 Apr 2003
Last Updated on STN: 30 Apr 2003

L5 ANSWER 21 OF 92 HCPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:510090 HCPLUS
DOCUMENT NUMBER: 137:221222
TITLE: Decolourisation and biodegradation of crystal violet
by soil fungi
AUTHOR(S): Kousar, Nikhat; Singara Charya, M. A.
CORPORATE SOURCE: Environmental Microbiology Laboratory, Department of
Botany, Kakatiya University, Warangal, 506 009, India
SOURCE: Frontiers in Microbial Biotechnology and Plant

Pathology (2002), 269-282. Editor(s): Manoharachary, C. Scientific Publishers (India): Jodhpur, India. CODEN: 69CUYT; ISBN: 81-7233-291-2

DOCUMENT TYPE:

LANGUAGE:

REFERENCE COUNT:

Conference
English
47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 22 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:360158 HCAPLUS

DOCUMENT NUMBER: 134:363353

TITLE: Fungamyl-like Aspergillus oryzae α -amylase variants with improved thermal stability and applications to starch processes

INVENTOR(S): Bisgård-Frantzen, Henrik; Svendsen, Allan; Pedersen, Sven

PATENT ASSIGNEE(S): Novozymes A/S, Den.

SOURCE: PCT Int. Appl., 48 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001034784	A1	20010517	WO 2000-DK626	20001110
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 2001012696	A5	20010606	AU 2001-12696	20001110
EP 1230351	A1	20020814	EP 2000-974351	20001110
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003513666	T2	20030415	JP 2001-537481	20001110
US 2004229764	A1	20041118	US 2004-820200	20040407
PRIORITY APPLN. INFO.:			DK 1999-1617	A 19991110
			US 1999-165786P	P 19991116
			US 2000-710339	A1 20001109
			WO 2000-DK626	W 20001110

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 23 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:739249 HCAPLUS

DOCUMENT NUMBER: 135:343610

TITLE: Use of fungal phytase to improve breadmaking performance of whole wheat bread

AUTHOR(S): Haros, Monica; Rosell, Cristina M.; Benedito, Carmen
CORPORATE SOURCE: Laboratorio de Cereales, Instituto de Agroquímica y
Tecnología de Alimentos (CSIC), Valencia, 46100, Spain
SOURCE: Journal of Agricultural and Food Chemistry (2001),
49(11), 5450-5454

CODEN: JAFCAU; ISSN: 0021-8561

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 24 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

ACCESSION NUMBER: 2001:346327 BIOSIS
DOCUMENT NUMBER: PREV200100346327
TITLE: Experimental approach to optimize the use of alpha-Amylases in breadmaking.
AUTHOR(S): Rosell, Cristina M. [Reprint author]; Haros, Monica; Escrivá, Consuelo; Benedito de Barber, Carmen
CORPORATE SOURCE: Instituto de Agroquímica y Tecnología de Alimentos, Consejo Superior de Investigaciones Científicas, Burjassot, 46100, Valencia, Spain
crosell@iata.csic.es
SOURCE: Journal of Agricultural and Food Chemistry, (June, 2001) Vol. 49, No. 6, pp. 2973-2977. print.
CODEN: JAFCAU. ISSN: 0021-8561.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 25 Jul 2001
Last Updated on STN: 19 Feb 2002

L5 ANSWER 25 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:544090 HCAPLUS
DOCUMENT NUMBER: 136:17908
TITLE: Inhibition of growth of *Aspergillus flavus* and fungal alpha.-amylases by a lectin-like protein from *Lablab purpureus*
AUTHOR(S): Fakhoury, A. M.; Woloshuk, C. P.
CORPORATE SOURCE: Department of Botany and Plant Pathology, Purdue University, West Lafayette, IN, 47907, USA
SOURCE: Molecular Plant-Microbe Interactions (2001), 14(8), 955-961
CODEN: MPMIEL; ISSN: 0894-0282
PUBLISHER: APS Press
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 26 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

ACCESSION NUMBER: 2001:221909 BIOSIS
DOCUMENT NUMBER: PREV200100221909
TITLE: Combined effect of different antistaling agents on the pasting properties of wheat flour.
AUTHOR(S): Rosell, Cristina M. [Reprint author]; Rojas, Jose A.; de Barber, Carmen Benedito
CORPORATE SOURCE: Instituto de Agroquímica y Tecnología de Alimentos, CSIC, Burjasot-46100, 46100, Valencia, Spain
crosell@iata.csic.es
SOURCE: European Food Research and Technology, (2001) Vol. 212, No. 4, pp. 473-476. print.
ISSN: 1438-2377.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 9 May 2001
Last Updated on STN: 18 Feb 2002

L5 ANSWER 27 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:586013 HCAPLUS
DOCUMENT NUMBER: 135:330530
TITLE: Economic utilization of agro-industrial wastes through solid state fermentation by *Aspergillus niger* F-21 for

AUTHOR(S) : *α-amylase production*
 Fadel, M.
 CORPORATE SOURCE: Microbial Chemistry Department, National Research
 Centre, Cairo, Egypt
 SOURCE: Egyptian Journal of Microbiology (2001), Volume Date
 2000, 35(2), 173-189
 CODEN: EJMBA2; ISSN: 0301-8172
 PUBLISHER: National Information and Documentation Centre
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 28 OF 92 SCISEARCH COPYRIGHT (c) 2006 The Thomson Corporation on
 STN
 ACCESSION NUMBER: 1999:474911 SCISEARCH
 THE GENUINE ARTICLE: 207UK
 TITLE: Alcoholysis reactions from starch with alpha-amylases
 AUTHOR: Santamaria R I; Del Rio G; Saab G; Rodriguez M E; Soberon
 X; Lopez-Munguia A (Reprint)
 CORPORATE SOURCE: UNAM, Inst Biotecnol, Apartado Postal 510-3, Cuernavaca
 62271, Morelos, Mexico (Reprint); UNAM, Inst Biotecnol,
 Cuernavaca 62271, Morelos, Mexico
 COUNTRY OF AUTHOR: Mexico
 SOURCE: FEBS LETTERS, (11 JUN 1999) Vol. 452, No. 3, pp. 346-350.
 ISSN: 0014-5793.
 PUBLISHER: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM,
 NETHERLANDS.
 DOCUMENT TYPE: Article; Journal
 LANGUAGE: English
 REFERENCE COUNT: 24
 ENTRY DATE: Entered STN: 1999
 Last Updated on STN: 1999
 ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L5 ANSWER 29 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1998:585900 HCAPLUS
 DOCUMENT NUMBER: 129:186146
 TITLE: Purification of an acid-stable *α*-amylase of
 fungal origin for use in starch saccharification
 INVENTOR(S): Vercauteren, Ronny; Dendooven, Els; Heylen, An Amanda
 Jules
 PATENT ASSIGNEE(S): Cerestar Holding B.V., Neth.
 SOURCE: Eur. Pat. Appl., 10 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 860500	A1	19980826	EP 1998-301183	19980218
EP 860500	B1	20040901		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 5962276	A	19991005	US 1998-24579	19980217
AT 275193	E	20040915	AT 1998-301183	19980218
PT 860500	T	20050131	PT 1998-301183	19980218
ES 2227771	T3	20050401	ES 1998-301183	19980218
JP 10271992	A2	19981013	JP 1998-39296	19980220
PRIORITY APPLN. INFO.:			GB 1997-3641	A 19970221
REFERENCE COUNT:	7	THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

L5 ANSWER 30 OF 92 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN DUPLICATE 11
ACCESSION NUMBER: 1998349327 EMBASE
TITLE: Utilisation of starch processing wastewater for production of microbial biomass protein and fungal alpha.-amylase by *Aspergillus oryzae*.
AUTHOR: Jin B.; Van Leeuwen H.J.; Patel B.; Yu Q.
CORPORATE SOURCE: B. Jin, Sch. of Biomolec./Biomedical Science, Griffith University, Nathan, QLD 4111, Australia
SOURCE: Bioresource Technology, (1998) Vol. 66, No. 3, pp. 201-206.
Refs: 15
ISSN: 0960-8524 CODEN: BIRTEB
PUBLISHER IDENT.: S 0960-8524(98)00060-1
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 19981130
Last Updated on STN: 19981130

L5 ANSWER 31 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN DUPLICATE 12
ACCESSION NUMBER: 1998:301219 BIOSIS
DOCUMENT NUMBER: PREV199800301219
TITLE: Thermostability and browning development of fungal alpha-amylase freeze-dried in carbohydrate and PVP matrices.
AUTHOR(S): Terebizznik, M. R.; Buera, M. P.; Pilosof, A. M. R. [Reprint author]
CORPORATE SOURCE: Departamento de Industrias, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Buenos Aires, Argentina
SOURCE: Lebensmittel-Wissenschaft und Technologie, (1998) Vol. 31, No. 2, pp. 143-149. print.
CODEN: LBWTAP. ISSN: 0023-6438.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 15 Jul 1998
Last Updated on STN: 15 Jul 1998

L5 ANSWER 32 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:76605 HCAPLUS
DOCUMENT NUMBER: 126:292673
TITLE: Rye and wheat flour treatment with enzymes
AUTHOR(S): Bruemmer, J. M.
CORPORATE SOURCE: Bundesanstalt Getreide-, Kartoffel- Fettforschung, Detmold, D-32756, Germany
SOURCE: Getreide, Mehl und Brot (1996), 50(6), 350-358
CODEN: GEMBAN; ISSN: 0367-4177
PUBLISHER: Deutscher Baecker-Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: German

L5 ANSWER 33 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:749573 HCAPLUS
DOCUMENT NUMBER: 126:28530
TITLE: Structure-function studies of two polysaccharide-degrading enzymes: *Bacillus stearothermophilus* α -amylase and *Trichoderma reesei* cellobiohydrolase II
AUTHOR(S): Koivula, Anu
CORPORATE SOURCE: Technical Research Centre, Finland

SOURCE: VTT Publications (1996), 277, 143pp
 CODEN: VTTPEY; ISSN: 1235-0621
 PUBLISHER: Valtion Teknillinen Tutkimuskeskus
 DOCUMENT TYPE: Journal
 LANGUAGE: English

L5 ANSWER 34 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1995:570928 HCAPLUS
 DOCUMENT NUMBER: 122:309817
 TITLE: Method for preparing immobilized enzyme conjugates and immobilized enzyme conjugates prepared thereby.
 INVENTOR(S): Lantero, Oreste J.; Brewer, Jack W.; Sarber, Sharon M.
 PATENT ASSIGNEE(S): Solvay Enzymes, Inc., USA; Genencor Int.
 SOURCE: Eur. Pat. Appl., 17 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 641859	A1	19950308	EP 1994-202377	19940819
EP 641859	B1	20031210		
R: AT, BE, CH, DE, DK, ES, FR, GB, IE, IT, LI, NL, SE				
AT 256179	E	20031215	AT 1994-202377	19940819
CA 2131225	AA	19950302	CA 1994-2131225	19940831
FI 9404021	A	19950302	FI 1994-4021	19940901
BR 9403419	A	19950509	BR 1994-3419	19940901
JP 07147981	A2	19950613	JP 1994-208447	19940901
CN 1107514	A	19950830	CN 1994-116866	19940901
CN 1061090	B	20010124		
US 5472861	A	19951205	US 1995-370220	19950109
US 5541097	A	19960730	US 1995-385831	19950209
PRIORITY APPLN. INFO.:			US 1993-114143	A 19930901
			US 1995-370220	A1 19950109

L5 ANSWER 35 OF 92 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
 ACCESSION NUMBER: 1995-12712 BIOTECHDS
 TITLE: Enzymes used in limit conditions. Examples in food technology;
 e.g. starch saccharification using thermostable alpha-amylase from *Bacillus licheniformis*, and bitterness removal from tenderized meat using protease

AUTHOR: Nicolas J
 CORPORATE SOURCE: Nat.Coll.Arts+Ind.Paris
 LOCATION: Biochimie Industrielle et Agroalimentaire, 292, rue Saint-Martin, 75141 Paris Cedex 03, France.
 SOURCE: C.R.Acad.Agric.Fr.; (1995) 81, 2, 11-17
 CODEN: CRAFEQ
 ISSN: 0989-6988
 DOCUMENT TYPE: Journal
 LANGUAGE: French

L5 ANSWER 36 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1993:58517 HCAPLUS
 DOCUMENT NUMBER: 118:58517
 TITLE: α -amylase mixtures for retarding the staling of baked goods
 INVENTOR(S): Bowles, Linda K.
 PATENT ASSIGNEE(S): Enzyme Bio-Systems Ltd., USA
 SOURCE: S. Africain, 27 pp.
 CODEN: SFXXAB
 DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
ZA 9106869	A	19920729	ZA 1991-6869	19910829
JP 04229128	A2	19920818	JP 1991-230466	19910910
JP 07110193	B4	19951129		
NO 9103583	A	19920313	NO 1991-3583	19910911
AU 9183831	A1	19920319	AU 1991-83831	19910911
AU 638659	B2	19930701		
FI 9104294	A	19920313	FI 1991-4294	19910912
PRIORITY APPLN. INFO.:			US 1990-581290	A 19900912

L5 ANSWER 37 OF 92 MEDLINE on STN DUPLICATE 13
ACCESSION NUMBER: 93000376 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1388663
TITLE: Stability of fungal alpha-amylase in sodium dodecylsulfate.
AUTHOR: Arakawa T; Hung L; Narhi L O
CORPORATE SOURCE: Amgen Inc., Amgen Center, Thousand Oaks, California 91320.
SOURCE: Journal of protein chemistry, (1992 Apr) 11 (2) 111-7.
Journal code: 8217321. ISSN: 0277-8033.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199211
ENTRY DATE: Entered STN: 19930122
Last Updated on STN: 19930122
Entered Medline: 19921104

L5 ANSWER 38 OF 92 SCISEARCH COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 1992:479080 SCISEARCH
THE GENUINE ARTICLE: JG966
TITLE: STUDIES ON THE BREAD-IMPROVING MECHANISM OF FUNGAL ALPHA-AMYLASE
AUTHOR: PRITCHARD P E (Reprint)
CORPORATE SOURCE: FLOUR MILLING & BAKING RES ASSOC, BIOCHEM SECT, CHORLEYWOOD WD3 5SH, HERTS, ENGLAND (Reprint)
COUNTRY OF AUTHOR: ENGLAND
SOURCE: JOURNAL OF BIOLOGICAL EDUCATION, (SPR 1992) Vol. 26, No. 1, pp. 12-18.
ISSN: 0021-9266.
PUBLISHER: INST BIOLOGY, 20 QUEENSBERRY PLACE, LONDON, ENGLAND SW7 2DZ.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: AGRI
LANGUAGE: English
REFERENCE COUNT: No References Keyed
ENTRY DATE: Entered STN: 1994
Last Updated on STN: 1994
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L5 ANSWER 39 OF 92 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
ACCESSION NUMBER: 1991-08314 BIOTECHDS
TITLE: Comparative profiles of fungal alpha-amylase production by submerged and surface fermentation;
comparison of Aspergillus oryzae submerged culture and solid-state fermentation
AUTHOR: Shah N K; *Ramamurthy V; Kothari R M

LOCATION: Biotechnology Division, Thapar Corporate R&D Centre, PO Box 68, Patiala 147 001, India.
SOURCE: Biotechnol.Lett.; (1991) 13, 5, 361-64
DOCUMENT TYPE: Journal
LANGUAGE: English

L5 ANSWER 40 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1993:447440 HCAPLUS
DOCUMENT NUMBER: 119:47440
TITLE: Direct conversion of raw starch to maltose in an agitated bead enzyme reactor using fungal alpha.-amylase
AUTHOR(S): Lee, Yong Hyun; Park, Jin Seo
CORPORATE SOURCE: Coll. Nat. Sci., Kyungpook Natl. Univ., Taegu, 702-701, S. Korea
SOURCE: Sanop Misaengmul Hakhoechi (1991), 19(3), 290-5
DOCUMENT TYPE: Journal
LANGUAGE: Korean

L5 ANSWER 41 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:427745 HCAPLUS
DOCUMENT NUMBER: 115:27745
TITLE: Use of fungal alpha-amylase in milling and baking
AUTHOR(S): Ranum, Peter; DeStefanis, Vincent A.
CORPORATE SOURCE: Flour Serv. Dep., Atochem North America, Buffalo, NY, 14240, USA
SOURCE: Cereal Foods World (1990), 35(9), 931-3
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

L5 ANSWER 42 OF 92 MEDLINE on STN
ACCESSION NUMBER: 90318322 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2370848
TITLE: The alpha-amylase genes in *Oryza sativa*: characterization of cDNA clones and mRNA expression during seed germination.
AUTHOR: O'Neill S D; Kumagai M H; Majumdar A; Huang N; Sutliff T D; Rodriguez R L
CORPORATE SOURCE: Department of Genetics, University of California, Davis 95616.
SOURCE: Molecular & general genetics : MGG, (1990 Apr) 221 (2) 235-44.
Journal code: 0125036. ISSN: 0026-8925.
PUB. COUNTRY: GERMANY, WEST: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-M24286; GENBANK-M24287; GENBANK-M24941
ENTRY MONTH: 199008
ENTRY DATE: Entered STN: 19900921
Last Updated on STN: 19900921
Entered Medline: 19900823

L5 ANSWER 43 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
DUPLICATE 14
ACCESSION NUMBER: 1989:492065 BIOSIS
DOCUMENT NUMBER: PREV198988118602; BA88:118602
TITLE: EFFECT OF POLYOLS ON FUNGAL ALPHA AMYLASE THERMOSTABILITY.
AUTHOR(S): GRABER M [Reprint author]; COMBES D
CORPORATE SOURCE: DEP DE GENIE BIOCHMIQUE ET ALIMENTAIRE, UA-CNRS-544, INST

NATIONAL DES SCI APPLIQUEES, AVE DE RANGUEIL, 31077
TOULOUSE CEDEX, FRANCE
SOURCE: Enzyme and Microbial Technology, (1989) Vol. 11, No. 10,
pp. 673-677.
DOCUMENT TYPE: CODEN: EMTED2. ISSN: 0141-0229.
FILE SEGMENT: Article
LANGUAGE: BA
ENTRY DATE: ENGLISH
Entered STN: 2 Nov 1989
Last Updated on STN: 2 Nov 1989

L5 ANSWER 44 OF 92 MEDLINE on STN DUPLICATE 15
ACCESSION NUMBER: 90143168 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2515679
TITLE: Physico-chemical properties of *Aspergillus flavus* var.
columnaris alpha-amylase.
AUTHOR: Ali F S; Abdel-Moneim A A
CORPORATE SOURCE: Department of Agricultural Microbiology, Faculty of
Agriculture, Minia University, Egypt.
SOURCE: Zentralblatt fur Mikrobiologie, (1989) 144 (8) 615-21.
JOURNAL code: 8209932. ISSN: 0232-4393.
PUB. COUNTRY: GERMANY, WEST: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199003
ENTRY DATE: Entered STN: 19900328
Last Updated on STN: 19900328
Entered Medline: 19900315

L5 ANSWER 45 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on
STN DUPLICATE 16
ACCESSION NUMBER: 1989:289047 BIOSIS
DOCUMENT NUMBER: PREV198988014391; BA88:14391
TITLE: THE HIGH MALTOSE-PRODUCING ALPHA AMYLASE OF
PENICILLIUM-EXPANSUM.
AUTHOR(S): DOYLE E M [Reprint author]; KELLY C T; FOGARTY W M
CORPORATE SOURCE: DEP INDUSTRIAL MICROBIOL, UNIV COLL, BELFIELD, DUBLIN 4,
IRELAND
SOURCE: Applied Microbiology and Biotechnology, (1989) Vol. 30, No.
5, pp. 492-496.
DOCUMENT TYPE: CODEN: AMBIDG. ISSN: 0175-7598.
FILE SEGMENT: Article
LANGUAGE: BA
ENTRY DATE: ENGLISH
Entered STN: 20 Jun 1989
Last Updated on STN: 27 Jul 1989

L5 ANSWER 46 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on
STN DUPLICATE 17
ACCESSION NUMBER: 1990:47225 BIOSIS
DOCUMENT NUMBER: PREV199089024589; BA89:24589
TITLE: CARBOHYDRATE COMPOSITIONS AND MOLECULAR STRUCTURE OF
DEXTRINS IN ENZYMATIC HIGH CONVERSION STARCH SYRUPS.
AUTHOR(S): NEBESNY E [Reprint author]
CORPORATE SOURCE: DEP FOOD TECHNOL, TECHNICAL UNIV, STEFANOWSKISTREET 4/10,
90-924 LODZ, POLAND
SOURCE: Starch, (1989) Vol. 41, No. 11, pp. 431-435.
DOCUMENT TYPE: CODEN: STARDD. ISSN: 0038-9056.
FILE SEGMENT: Article
LANGUAGE: BA
ENTRY DATE: ENGLISH
Entered STN: 11 Jan 1990
Last Updated on STN: 27 Feb 1990

L5 ANSWER 47 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on
STN DUPLICATE 18

ACCESSION NUMBER: 1990:380376 BIOSIS
DOCUMENT NUMBER: PREV199090067057; BA90:67057
TITLE: STUDIES ON ALPHA AMYLASE INHIBITORS PRODUCED BY SOIL
MICROORGANISMS ISOLATION AND ACTIVITIES OF THE ALPHA
AMYLASE INHIBITORS FROM STREPTOMYCES STRAIN DMCJ-144.
AUTHOR(S): CHUNG Y J [Reprint author]; CHOI K H; CHOI E C; KIM B K
CORPORATE SOURCE: DEP MICROBIAL CHEM, COLLEGE PHARM, SEOUL NATL UNIV, SEOUL
151-742, KOREA
SOURCE: Seoul University Journal of Pharmaceutical Sciences, (1989)
Vol. 14, pp. 1-14.
CODEN: STYNDJ. ISSN: 0250-3336.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: KOREAN
ENTRY DATE: Entered STN: 21 Aug 1990
Last Updated on STN: 22 Aug 1990

L5 ANSWER 48 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on
STN DUPLICATE 19

ACCESSION NUMBER: 1988:460056 BIOSIS
DOCUMENT NUMBER: PREV198886101775; BA86:101775
TITLE: PRODUCTION OF ALPHA AMYLASE BY THE RUMINAL ANAEROBIC FUNGUS
NEOCALLIMASTIX-FRONTALIS.
AUTHOR(S): MOUNTFORT D O [Reprint author]; ASHER R A
CORPORATE SOURCE: CAWTHON INST, PRIVATE BAG, NELSON, NZ
SOURCE: Applied and Environmental Microbiology, (1988) Vol. 54, No.
9, pp. 2293-2299.
CODEN: AEMIDF. ISSN: 0099-2240.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 18 Oct 1988
Last Updated on STN: 18 Oct 1988

L5 ANSWER 49 OF 92 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
ACCESSION NUMBER: 1987-11368 BIOTECHDS
TITLE: High maltose syrup compositions;
produced from starch using alpha-amylase, beta-amylase and
alpha-1,6-glucosidase
PATENT ASSIGNEE: Lonza
PATENT INFO: US 4675293 23 Jun 1987
APPLICATION INFO: US 1984-640890 15 Aug 1984
PRIORITY INFO: US 1984-640890 15 Aug 1984
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 1986-049802 [08]

L5 ANSWER 50 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on
STN DUPLICATE 20

ACCESSION NUMBER: 1987:43720 BIOSIS
DOCUMENT NUMBER: PREV198783023066; BA83:23066
TITLE: PRODUCTION AND CHARACTERISTICS OF RAW-STARCH-DIGESTING
ALPHA AMYLASE FROM A PROTEASE-NEGATIVE ASPERGILLUS-FICUUM
MUTANT.
AUTHOR(S): HAYASHIDA S [Reprint author]; TERAMOTO Y
CORPORATE SOURCE: DEP OF AGRIC CHEMISTRY, KYUSHU UNIV, FUKUOKA 812, JAPAN
SOURCE: Applied and Environmental Microbiology, (1986) Vol. 52, No.
5, pp. 1068-1073.
CODEN: AEMIDF. ISSN: 0099-2240.
DOCUMENT TYPE: Article
FILE SEGMENT: BA

LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 7 Jan 1987
Last Updated on STN: 7 Jan 1987

L5 ANSWER 51 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1986:568008 HCAPLUS
DOCUMENT NUMBER: 105:168008
TITLE: Immobilization of fungal .alpha.-amylase in calcium alginate
AUTHOR(S): Song, Il Cheon; Suh, Han Soo; Kim, Kea Yong
CORPORATE SOURCE: Coll. Eng., Hanyang Univ., Seoul, S. Korea
SOURCE: Polymer (Korea) (1986), 10(4), 318-23
CODEN: POLLDG; ISSN: 0379-153X
DOCUMENT TYPE: Journal
LANGUAGE: Korean

L5 ANSWER 52 OF 92 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
ACCESSION NUMBER: 1986-10226 BIOTECHDS
TITLE: Studies on the application of maltogenic amylase in the production of maltose containing syrup; use in combination with pullulanase and fungal alpha-amylase
AUTHOR: Slominska L; Starogardzka G
LOCATION: Central Laboratorium Przemyslu Ziemniaczanego, Zwierzniecka 18, 60-814 Poznan, Poland.
SOURCE: Starch; (1986) 38, 6, 205-10
CODEN: STARDD
DOCUMENT TYPE: Journal
LANGUAGE: English

L5 ANSWER 53 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 1986:225444 BIOSIS
DOCUMENT NUMBER: PREV198681116744; BA81:116744
TITLE: STUDIES ON SCREENING AND ISOLATION OF ALPHA AMYLASE INHIBITORS OF SOIL MICROORGANISMS II. ISOLATION AND ACTIVITIES OF THE INHIBITOR OF STREPTOMYCES STRAIN DMC-72.
AUTHOR(S): KIM K J [Reprint author]; LEE S H; KIM J W; KIM H W; SHIM M J; CHOI E C; KIM B K
CORPORATE SOURCE: DEPARTMENT OF MICROBIAL CHEMISTRY, COLLEGE OF PHARMACY, SEOUL NATIONAL UNIVERSITY, SEOUL 151, KOREA
SOURCE: Korean Journal of Mycology, (1985) Vol. 13, No. 4, pp. 203-212.
CODEN: HWHCD5. ISSN: 0253-651x.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 28 May 1986
Last Updated on STN: 28 May 1986

L5 ANSWER 54 OF 92 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
ACCESSION NUMBER: 1986-08652 BIOTECHDS
TITLE: A process for cofermentation of whey and corn to produce industrial alcohol; ethanol production using Kluyveromyces fragilis and Saccharomyces cerevisiae following substrate saccharification (conference paper)
AUTHOR: Whalen P J; Shahani K M
LOCATION: Department of Food Science and Technology, University of Nebraska, Lincoln, Nebraska 68583-0919, U.S.A.
SOURCE: Biotechnol.Bioeng.; (1985) Symp. 15, 117-28
CODEN: BIBIAU
DOCUMENT TYPE: Journal
LANGUAGE: English

L5 ANSWER 55 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on
STN
ACCESSION NUMBER: 1986:319116 BIOSIS
DOCUMENT NUMBER: PREV198682043421; BA82:43421
TITLE: STUDIES ON SCREENING AND ISOLATION OF ALPHA AMYLASE
INHIBITORS OF SOIL MICROORGANISMS 1. ISOLATION AND
ACTIVITIES OF THE INHIBITOR OF STREPTOMYCES STRAIN DMC-225.
AUTHOR(S): KWAK J H [Reprint author]; CHOI E C; KIM B K
CORPORATE SOURCE: COLL PHARMACY, SEOUL NATL UNIV, SEOUL 151, KOREA
SOURCE: Archives of Pharmacal Research (Seoul), (1985) Vol. 8, No.
2, pp. 67-76.
CODEN: APHRDQ. ISSN: 0253-6269.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 8 Aug 1986
Last Updated on STN: 8 Aug 1986

L5 ANSWER 56 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on
STN DUPLICATE 21
ACCESSION NUMBER: 1983:245112 BIOSIS
DOCUMENT NUMBER: PREV198376002604; BA76:2604
TITLE: AN IMMOBILIZED 2 ENZYME SYSTEM FUNGAL
ALPHA AMYLASE EC-3.2.1.1 GLUCO AMYLASE
EC-3.2.1.3 AND ITS USE IN THE CONTINUOUS PRODUCTION OF HIGH
CONVERSION MALTOSE CONTAINING CORN SYRUPS.
AUTHOR(S): HAUSSER A G [Reprint author]; GOLDBERG B S; MERTENS J L
CORPORATE SOURCE: AMERACE CORP, TECHNICAL CENT, ACE ROAD, BUTLER, NJ 07405,
USA
SOURCE: Biotechnology and Bioengineering, (1983) Vol. 25, No. 2,
pp. 525-540.
CODEN: BIBIAU. ISSN: 0006-3592.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH

L5 ANSWER 57 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on
STN
ACCESSION NUMBER: 1983:191359 BIOSIS
DOCUMENT NUMBER: PREV198375041359; BA75:41359
TITLE: PURIFICATION AND CHARACTERIZATION OF A THERMOPHILIC ALPHA
AMYLASE OF ASPERGILLUS-NIGER.
AUTHOR(S): RAMASESH N [Reprint author]; SREEKANTIAH K R; MURTHY V S
CORPORATE SOURCE: DISCIPLINE OF MICROBIOL AND FERMENTATION TECHNOL, CENTRAL
FOOD TECHNOL RESEARCH INST, MYSORE-570013, INDIA
SOURCE: Starch, (1982) Vol. 34, No. 8, pp. 274-279.
CODEN: STARDD. ISSN: 0038-9056.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH

L5 ANSWER 58 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1983:85216 HCAPLUS
DOCUMENT NUMBER: 98:85216
TITLE: The use of a simple experimental design and modeling
technique to aid in characterizing a commercial
fungal alpha-amylase
AUTHOR(S): Dawson, H. G.; Allen, W. G.
CORPORATE SOURCE: Miles Lab. Inc., Elkhart, IN, USA
SOURCE: Util. Enzymes Technol. Aliment., Symp. Int. (1982),
41-8. Editor(s): Dupuy, Pierre. Tech. Doc.
Lavoisier: Paris, Fr.
CODEN: 49ATA4

DOCUMENT TYPE: Conference
LANGUAGE: English

L5 ANSWER 59 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1981:402402 HCAPLUS
DOCUMENT NUMBER: 95:2402
TITLE: Comparative characterization of α -amylase preparations
AUTHOR(S): Pantschev, C.; Klenz, G.; Haefner, B.
CORPORATE SOURCE: Inst. Enzymol. Tech. Mikrobiol., Berlin, Ger. Dem. Rep.
SOURCE: Lebensmittelindustrie (1981), 28(2), 71-4
DOCUMENT TYPE: Journal
LANGUAGE: German

L5 ANSWER 60 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1981:98852 HCAPLUS
DOCUMENT NUMBER: 94:98852
TITLE: Controlling the activity of enzymes immobilized on organic support material
INVENTOR(S): Fischer, Jens; Millner, Rudolf; Rosenfeld, Eike; Schmidt, Peter; Schellenberger, Alfred
PATENT ASSIGNEE(S): Ger. Dem. Rep.
SOURCE: Ger. (East), 6 pp.
CODEN: GEXXA8
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DD 144558	Z	19801022	DD 1979-213501	19790608
PRIORITY APPLN. INFO.:			DD 1979-213501	A1 19790608

L5 ANSWER 61 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1980:196352 HCAPLUS
DOCUMENT NUMBER: 92:196352
TITLE: Environmental factors and cultivation techniques in fungal α -amylase production
AUTHOR(S): Meyrath, J.; Bayer, G.
CORPORATE SOURCE: Inst. Appl. Microbiol., Univ. Agric., Vienna, Austria
SOURCE: Proceedings of the FEBS Meeting (1980), 61(Ind. Clin. Enzymol.), 331-8
CODEN: FEBPBY; ISSN: 0071-4402
DOCUMENT TYPE: Journal
LANGUAGE: English

L5 ANSWER 62 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1979:401926 HCAPLUS
DOCUMENT NUMBER: 91:1926
TITLE: The influence of charged matrix surfaces on the thermostabilizing effect of calcium ions on immobilized fungal α -amylase
AUTHOR(S): Fischer, J.; Ulbrich, R.; Schellenberger, A.
CORPORATE SOURCE: Inst. Enzymol. Tech. Mikrobiol., Berlin, 104, Ger. Dem. Rep.
SOURCE: Acta Biologica et Medica Germanica (1979), 37(9), 1413-24
CODEN: ABMGAJ; ISSN: 0001-5318
DOCUMENT TYPE: Journal

LANGUAGE: English

L5 ANSWER 63 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1979:21089 HCAPLUS
DOCUMENT NUMBER: 90:21089
TITLE: Free-flowing fungal enzyme composition
INVENTOR(S): Vidal, Frederick D.; Gerrity, Albert B.
PATENT ASSIGNEE(S): Pennwalt Corp., USA
SOURCE: U.S., 4 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4116772	A	19780926	US 1975-600323	19750730
PRIORITY APPLN. INFO.:			US 1975-600323	A 19750730

L5 ANSWER 64 OF 92 MEDLINE on STN DUPLICATE 22
ACCESSION NUMBER: 79161711 MEDLINE
DOCUMENT NUMBER: PubMed ID: 749472
TITLE: The influence of charged matrix surfaces on the thermostabilizing effect of calcium ions on immobilized fungal alpha-amylase.
AUTHOR: Fischer J; Ulbrich R; Schellenberger A
SOURCE: Acta biologica et medica Germanica, (1978) 37 (9) 1413-24.
Journal code: 0370276. ISSN: 0001-5318.
PUB. COUNTRY: GERMANY, EAST: German Democratic Republic
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197906
ENTRY DATE: Entered STN: 19900315
Last Updated on STN: 19900315
Entered Medline: 19790611

L5 ANSWER 65 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN DUPLICATE 23
ACCESSION NUMBER: 1978:226728 BIOSIS
DOCUMENT NUMBER: PREV197866039225; BA66:39225
TITLE: MODIFIED AMYLOGRAPH TEST FOR DETERMINING DIASTATIC ACTIVITY IN FLOUR SUPPLEMENTED WITH FUNGAL ALPHA AMYLASE.
AUTHOR(S): RANUM P M [Reprint author]; KULP K; AGASIE F R
CORPORATE SOURCE: PENNWALT CORP, BROADVIEW, ILL 60153, USA
SOURCE: Cereal Chemistry, (1978) Vol. 55, No. 3, pp. 321-331.
CODEN: CECHAF. ISSN: 0009-0352.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH

L5 ANSWER 66 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1978:611067 HCAPLUS
DOCUMENT NUMBER: 89:211067
TITLE: Degradation of starch granules by α -amylases of fungi
AUTHOR(S): Takaya, T.; Sugimoto, Y.; Imo, E.; Tominaga, Y.; Nakatani, N.; Fuwa, H.
CORPORATE SOURCE: Dep. Food Nutr., Osaka City Univ., Osaka, Japan
SOURCE: Staerke (1978), 30(9), 289-93
CODEN: STRKA6; ISSN: 0038-9056
DOCUMENT TYPE: Journal

LANGUAGE: English

L5 ANSWER 67 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on
STN DUPLICATE 24

ACCESSION NUMBER: 1979:254136 BIOSIS
DOCUMENT NUMBER: PREV197968056640; BA68:56640
TITLE: KINETIC BEHAVIOR OF SOLUBLE FUNGAL ALPHA
AMYLASE FROM ASPERGILLUS-NIGER.
AUTHOR(S): ATTIA R M [Reprint author]; GAMAL R F; DOKHAN A M
CORPORATE SOURCE: MICROBIOL DEP, FAC AGRIC, AIN SHAMS UNIV, CAIRO, EGYPT
SOURCE: Revista de Microbiologia, (1978) Vol. 9, No. 3, pp.
159-162.
CODEN: RMBGBP. ISSN: 0001-3714.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH

L5 ANSWER 68 OF 92 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights
reserved on STN DUPLICATE 25

ACCESSION NUMBER: 78126314 EMBASE
DOCUMENT NUMBER: 1978126314
TITLE: Simple and rapid colorimetric method for the
microdetermination of alpha amylase.
AUTHOR: Attia R.; Ali S.A.
CORPORATE SOURCE: Microbiol. Enz. Unit, Microbiol. Res. Div., Agric. Res.
Cent. Egypt, Giza, Egypt
SOURCE: Zentralblatt fur Bakteriologie Parasitenkunde
Infektionskrankheiten und Hygiene Zweite Abteilung, (1977)
Vol. 132, No. 3, pp. 193-195.
CODEN: ZBPIA
COUNTRY: Germany
DOCUMENT TYPE: Journal
FILE SEGMENT: 004 Microbiology
029 Clinical Biochemistry
LANGUAGE: English

L5 ANSWER 69 OF 92 HCPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1980:210709 HCPLUS
DOCUMENT NUMBER: 92:210709
TITLE: Method for the determination of the amylolytic
activity for enzyme preparations of microbiological
origin
AUTHOR(S): Fonberg-Broczek, Monika; Urbanek-Karbowska, Bogumila
CORPORATE SOURCE: Pol.
SOURCE: Metody Badania Prep. Enzym. (1977), 1-6. Panstw.
Zakl. Hig.: Warsaw, Pol.
CODEN: 43DIAC
DOCUMENT TYPE: Conference
LANGUAGE: Polish

L5 ANSWER 70 OF 92 HCPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1975:405387 HCPLUS
DOCUMENT NUMBER: 83:5387
TITLE: Smoking materials
INVENTOR(S): Mitchell, Terence George; Pritchard, John A.
PATENT ASSIGNEE(S): British-American Tobacco Co. Ltd., UK
SOURCE: S. African, 14 pp.
CODEN: SFXXAB
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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ZA 7303535	A	19740424	ZA 1973-3535	19730524
GB 1408293	A	19751001	GB 1972-28786	19730522
AU 7356253	A1	19741205	AU 1973-56253	19730529
CA 984254	A1	19760224	CA 1973-172944	19730531
PRIORITY APPLN. INFO.:			GB 1972-28786	A 19720620

L5 ANSWER 71 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1975:169017 HCAPLUS
DOCUMENT NUMBER: 82:169017
TITLE: Comparison in breadmaking of bacterial .alpha .-amylase, fungal .alpha .-amylase activities and of the activity of alpha-amylase extracted from barley cristallized malt (Cristomalt)
AUTHOR(S): Berger, M.; Grandvoinnet, P.; Sennedot, Jacqueline; Courtadon, R.; Seck, A. S.
CORPORATE SOURCE: Grands Moulins Pantin, Paris, Fr.
SOURCE: Annales de Technologie Agricole (1974), 23(2), 161-74
CODEN: ATAPAA; ISSN: 0003-4223
DOCUMENT TYPE: Journal
LANGUAGE: French

L5 ANSWER 72 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1975:545695 HCAPLUS
DOCUMENT NUMBER: 83:145695
TITLE: Application of microbial enzyme preparations in brewing. I. Evaluation of the technological use of various types of enzyme preparations
AUTHOR(S): Cariapa, Subroto; Mostek, Josef
CORPORATE SOURCE: Vys. Sk. Chem.-Technol., Prague, Czech.
SOURCE: Sbornik Vysoké Školy Chemicko-Technologické v Praze, E: Potraviny (1974), E41, 129-39
CODEN: SVSCAZ; ISSN: 0554-9701
DOCUMENT TYPE: Journal
LANGUAGE: English

L5 ANSWER 73 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1975:403315 HCAPLUS
DOCUMENT NUMBER: 83:3315
TITLE: Isolation, purification, and properties of bacterial and fungal amylases
AUTHOR(S): Delecourt, R.
CORPORATE SOURCE: Soc. Rapidase, Seclin, Fr.
SOURCE: Annales de Technologie Agricole (1974), 23(2), 127-39
CODEN: ATAPAA; ISSN: 0003-4223
DOCUMENT TYPE: Journal
LANGUAGE: French

L5 ANSWER 74 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1975:543667 HCAPLUS
DOCUMENT NUMBER: 83:143667
TITLE: Immobilization of enzymes by the radiopolymerization of acryl amide
AUTHOR(S): Kawashima, K.; Umeda, K.
CORPORATE SOURCE: Natl. Food Res. Inst., Minist. Agric. For., Tokyo, Japan
SOURCE: Improv. Food Qual. Irradiat., Proc. Panel (1974), Meeting Date 1973, 119-28. IAEA: Vienna, Austria.
CODEN: 31GEAO
DOCUMENT TYPE: Conference
LANGUAGE: English

L5 ANSWER 75 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1973:533402 HCAPLUS
DOCUMENT NUMBER: 79:133402
TITLE: Enzymes agents. LXI. Separatory determination of enzymes. IX. Separatory determination of bacterial α -amylase and Aspergillus α -amylase
AUTHOR(S): Sugiura, Mamoru; Ogiso, Taro; Iwata, Tadahiko; Amano, Suzuyo
CORPORATE SOURCE: Tokyo Coll. Pharm., Tokyo, Japan
SOURCE: Yakuzaigaku (1972), 32(4), 196-200
CODEN: YAKUA2; ISSN: 0372-7629
DOCUMENT TYPE: Journal
LANGUAGE: Japanese

L5 ANSWER 76 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1973:417121 HCAPLUS
DOCUMENT NUMBER: 79:17121
TITLE: Influence of crust pigments in white baking
AUTHOR(S): Benedict, G.
CORPORATE SOURCE: Kulmbach, Fed. Rep. Ger.
SOURCE: Ber. Tag. Baeckerei-Technol., Vortr. Tag. (1972), 79-89. Granum-Verlag: Detmold, Ger.
CODEN: 26RKAJ
DOCUMENT TYPE: Conference
LANGUAGE: German

L5 ANSWER 77 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1970:41765 HCAPLUS
DOCUMENT NUMBER: 72:41765
TITLE: Production of beer
INVENTOR(S): Clayton, David H.
PATENT ASSIGNEE(S): A.B.M. Industrial Products Ltd.
SOURCE: S. African, 29 pp.
CODEN: SFXXAB
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
ZA 6900044	-----	19690729	-----	-----
PRIORITY APPLN. INFO.:			GB	19680118

L5 ANSWER 78 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1969:511622 HCAPLUS
DOCUMENT NUMBER: 71:111622
TITLE: Stability of fungal α -amylase in relation to the active acidity of intermediates during commercial bread baking
AUTHOR(S): Vedernikova, E. I.; Linetskaya, G. N.; Kozhukhar, M. M.
CORPORATE SOURCE: Ukr. Nauch.-Issled. Inst. Pishch. Prom., USSR
SOURCE: Fermenty Med., Pishch. Prom. Sel. Khoz. (1968), 221-2.
Editor(s): Gulyi, M. F. Naukova Dumka: Kiev, USSR.
CODEN: 21IIAZ
DOCUMENT TYPE: Conference
LANGUAGE: Russian

L5 ANSWER 79 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1967:455330 HCAPLUS
DOCUMENT NUMBER: 67:55330
TITLE: Noncrystallizing high-dextrose-equivalent sirups
PATENT ASSIGNEE(S): Miles Laboratories, Inc.
SOURCE: Brit., 5 pp.

CODEN: BRXXAA

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	-----	-----	-----	-----
GB 1071538		19670607	GB	
US 3329578		19670000	US	
PRIORITY APPLN. INFO.:			US	19640908

L5 ANSWER 80 OF 92 HCPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1961:101206 HCPLUS

DOCUMENT NUMBER: 55:101206

ORIGINAL REFERENCE NO.: 55:19055d-f

TITLE: Detection and approximate estimation of fungal amylase supplementation of wheat flour

AUTHOR(S): Hayden, K. J.

CORPORATE SOURCE: Novadel Ltd., London

SOURCE: Journal of the Science of Food and Agriculture (1961), 12, 123-7

DOCUMENT TYPE: CODEN: JSFAAE; ISSN: 0022-5142

LANGUAGE: Journal

Unavailable

L5 ANSWER 81 OF 92 HCPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1963:62427 HCPLUS

DOCUMENT NUMBER: 58:62427

ORIGINAL REFERENCE NO.: 58:10691e-f

TITLE: Production of fungal amylase for use in grain distilleries

AUTHOR(S): Blaisten, Raul J.

CORPORATE SOURCE: Univ. Nacl., Tucuman, Argent.

SOURCE: Arch. Bioquim., Quim. Farm., Tucuman (1961), 9(2), 31-43

DOCUMENT TYPE: Journal

LANGUAGE: Spanish

L5 ANSWER 82 OF 92 HCPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1957:91269 HCPLUS

DOCUMENT NUMBER: 51:91269

ORIGINAL REFERENCE NO.: 51:16602h

TITLE: Stability of fungal .alpha .-amylase

AUTHOR(S): Roy, Durlav K.

CORPORATE SOURCE: Indian Inst. Biochem. Exptl. Med., Calcutta

SOURCE: Ann. Biochem. and Exptl. Med. (Calcutta) (1956), 16, 121-2

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

L5 ANSWER 83 OF 92 HCPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1957:91268 HCPLUS

DOCUMENT NUMBER: 51:91268

ORIGINAL REFERENCE NO.: 51:16602g

TITLE: Isoelectric point of fungal .alpha .-amylase

AUTHOR(S): Roy, Durlav K.

CORPORATE SOURCE: Indian Inst. Biochem. Exptl. Med., Calcutta

SOURCE: Ann. Biochem. and Exptl. Med. (Calcutta) (1956), 16, 119-20

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

L5 ANSWER 84 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1957:91265 HCAPLUS
DOCUMENT NUMBER: 51:91265
ORIGINAL REFERENCE NO.: 51:16602d-e
TITLE: Heat stability of fungal .
alpha.-amylase
AUTHOR(S): Roy, Durlav K.
CORPORATE SOURCE: Indian Inst. Biochem. Exptl. Med., Calcutta
SOURCE: Ann. Biochem. and Exptl. Med. (Calcutta) (1956), 16,
111-12
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

L5 ANSWER 85 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1956:32744 HCAPLUS
DOCUMENT NUMBER: 50:32744
ORIGINAL REFERENCE NO.: 50:6587f-g
TITLE: Temperature and pH optima of α -amylase
from Aspergillus oryzae
AUTHOR(S): Roy, Durlav K.
CORPORATE SOURCE: Indian Inst. Med. Research, Calcutta
SOURCE: Ann. Biochem. and Exptl. Med. (India) (1955), 15,
101-2
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

L5 ANSWER 86 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1953:35095 HCAPLUS
DOCUMENT NUMBER: 47:35095
ORIGINAL REFERENCE NO.: 47:5977d-g
TITLE: Purification and characterization of fungal
.alpha.-amylase
AUTHOR(S): Bovard, Freeman C.
CORPORATE SOURCE: Iowa State Coll., Ames
SOURCE: Iowa State College Journal of Science (1953), 27,
132-3
CODEN: ISCJAF; ISSN: 0096-2783
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

L5 ANSWER 87 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1954:19673 HCAPLUS
DOCUMENT NUMBER: 48:19673
ORIGINAL REFERENCE NO.: 48:3580g-i,3581a-f
TITLE: The use of fungal enzymes for breadmaking purposes
AUTHOR(S): Greup, D. H.; Hintzer, H. M. R.
CORPORATE SOURCE: Central Instituut Voor Voedingsonderzoek T.N.O.,
Wageningen, The Netherlands
SOURCE: 2nd Intern. Congr. Fermentation Inds. Knocke, Lectures
and Communs. (1952) 232-338
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

L5 ANSWER 88 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1954:19674 HCAPLUS
DOCUMENT NUMBER: 48:19674
ORIGINAL REFERENCE NO.: 48:3580g-i,3581a-f
TITLE: The use of fungal enzymes for breadmaking purposes
AUTHOR(S): Greup, D. H.; Hintzer, H. M. R.
CORPORATE SOURCE: Central Instituut Voor Voedingsonderzoek T.N.O.,
Wageningen, Neth.
SOURCE: Central Inst. Voedingsonderzoek T.N.O. Afdel. Graan-,
Meel-en Broodonderzoek Wageningen, Mededel (1952), No.

44E,
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

L5 ANSWER 89 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1951:19322 HCAPLUS
DOCUMENT NUMBER: 45:19322
ORIGINAL REFERENCE NO.: 45:3438e-g
TITLE: Crystallization of fungal .alpha.-amylase and limit dextrinase
AUTHOR(S): Underkoefler, L. A.; Roy, D. K.
CORPORATE SOURCE: Iowa State Coll., Ames
SOURCE: Cereal Chemistry (1951), 28, 18-29
CODEN: CECHAF; ISSN: 0009-0352
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

L5 ANSWER 90 OF 92 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1950:49498 HCAPLUS
DOCUMENT NUMBER: 44:49498
ORIGINAL REFERENCE NO.: 44:9495h-i,9496a
TITLE: Production of mold amylases in submerged culture. II. Factors affecting the production of alpha-amylase and maltase by certain aspergilli
AUTHOR(S): Tsuchiya, Henry M.; Corman, Julian; Koepsell, Harold J.
SOURCE: Cereal Chemistry (1950), 27, 322-30
CODEN: CECHAF; ISSN: 0009-0352
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

L5 ANSWER 91 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 2001:501383 BIOSIS
DOCUMENT NUMBER: PREV200100501383
TITLE: Cofermentation of whey permeate and starchy waste for ethanol and biomass production.
AUTHOR(S): Fadel, M. [Reprint author]
CORPORATE SOURCE: Microbial Chemistry Department, National Research Centre, Cairo, Egypt
SOURCE: Egyptian Journal of Microbiology, (2000 (2001)) Vol. 35, No. 3, pp. 289-308. print.
CODEN: EJMBA2. ISSN: 0301-8172.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 24 Oct 2001
Last Updated on STN: 23 Feb 2002

L5 ANSWER 92 OF 92 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 2001:457507 BIOSIS
DOCUMENT NUMBER: PREV200100457507
TITLE: Economic utilization of agro-industrial wastes through solid state fermentation by *Aspergillus niger* F-21 for alpha-amylase production.
AUTHOR(S): Fadel, M. [Reprint author]
CORPORATE SOURCE: Microbial Chemistry Department, National Research Centre, Dokki, Cairo, Egypt
SOURCE: Egyptian Journal of Microbiology, (2000 (2001)) Vol. 35, No. 2, pp. 173-189. print.
CODEN: EJMBA2. ISSN: 0301-8172.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 26 Sep 2001

Last Updated on STN: 22 Feb 2002

=> e bisgard h/au

E1	2	BISGARD GERALD/AU
E2	45	BISGARD GERALD E/AU
E3	1	--> BISGARD H/AU
E4	1	BISGARD H C/AU
E5	23	BISGARD J C/AU
E6	16	BISGARD J D/AU
E7	6	BISGARD J DEWEY/AU
E8	1	BISGARD JAY C/AU
E9	22	BISGARD K/AU
E10	89	BISGARD K M/AU
E11	1	BISGARD K MAACH/AU
E12	9	BISGARD K MAACK/AU

=> e bisgard-Frantzen h/au

E1	1	BISGARD P/AU
E2	1	BISGARD POUL/AU
E3	0	--> BISGARD-FRANTZEN H/AU
E4	2	BISGARDFRANTZEN H/AU
E5	1	BISGAWA F/AU
E6	2	BISGAY K/AU
E7	1	BISGAY L/AU
E8	6	BISGEIER G/AU
E9	9	BISGEIER G P/AU
E10	1	BISGEIER GEORGE/AU
E11	2	BISGES A/AU
E12	16	BISGES A D/AU

=> e frantzen henrik/au

E1	1	FRANTZEN H P/AU
E2	1	FRANTZEN HANDELAND G/AU
E3	0	--> FRANTZEN HENRIK/AU
E4	3	FRANTZEN HENRIK B/AU
E5	24	FRANTZEN I/AU
E6	2	FRANTZEN I M/AU
E7	4	FRANTZEN INGE/AU
E8	2	FRANTZEN INGE MARJOLEIN/AU
E9	34	FRANTZEN J/AU
E10	5	FRANTZEN J A/AU
E11	6	FRANTZEN J F/AU
E12	20	FRANTZEN J J/AU

=> s e4

L6	3	"FRANTZEN HENRIK B"/AU
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=> e svendsen a/au

E1	1	SVENDSE F/AU
E2	6	SVENDSEN/AU
E3	412	--> SVENDSEN A/AU
E4	1	SVENDSEN A A/AU
E5	363	SVENDSEN A B/AU
E6	109	SVENDSEN A BAERHEIM/AU
E7	1	SVENDSEN A BARHEIM/AU
E8	17	SVENDSEN A J/AU
E9	12	SVENDSEN A K/AU
E10	1	SVENDSEN A L/AU
E11	4	SVENDSEN A M/AU
E12	3	SVENDSEN A M B/AU

=> s e3

L7	412	"SVENDSEN A"/AU
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=> e pedersen s/au
E1      1      PEDERSEN RUNE J S/AU
E2      1      PEDERSEN RUTH L/AU
E3  1382 --> PEDERSEN S/AU
E4      4      PEDERSEN S */AU
E5      559     PEDERSEN S A/AU
E6      7      PEDERSEN S A S/AU
E7      1      PEDERSEN S ANKER/AU
E8  418     PEDERSEN S B/AU
E9      1      PEDERSEN S BOEL/AU
E10     64     PEDERSEN S C/AU
E11     15     PEDERSEN S D/AU
E12     1      PEDERSEN S DIAMETER REN/AU

=> s e3
L8      1382 "PEDERSEN S"/AU

=> d his

(FILE 'HOME' ENTERED AT 10:24:31 ON 12 JAN 2006)

FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS,
LIFESCI' ENTERED AT 10:25:20 ON 12 JAN 2006
L1      53363 S ALPHA (W) AMYLASE?
L2      352188 S FUNGAMYL OR FUNGAL
L3      585 S L1(A)L2
L4      140 S (THREMOSTABILITY OR STABILITY OR "PH") AND L3
L5      92 DUP REM L4 (48 DUPLICATES REMOVED)
          E BISGARD H/AU
          E BISGARD-FRANTZEN H/AU
          E FRANTZEN HENRIK/AU
L6      3 S E4
          E SVENDSEN A/AU
L7      412 S E3
          E PEDERSEN S/AU
L8      1382 S E3

=> s 16 or 17 or 18
L9      1795 L6 OR L7 OR L8

=> s 13 and 19
L10     7 L3 AND L9

=> dup rem 110
PROCESSING COMPLETED FOR L10
L11     4 DUP REM L10 (3 DUPLICATES REMOVED)

=> d 1-4 ibib ab

L11 ANSWER 1 OF 4 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2005-10916 BIOTECHDS
TITLE: Producing fungal alpha-amylase
variants which is useful for preparing dough or baked from
dough product, based on comparison of three-dimensional
structures of fungal alpha-
amylase and maltogenic alpha-amylase;
recombinant alpha-amylase production for use in food
industry
AUTHOR: SVENDSEN A; BEIER L; VIND J; SPENDLER T; JENSEN M T
PATENT ASSIGNEE: NOVOZYMES AS
PATENT INFO: WO 2005019443 3 Mar 2005
APPLICATION INFO: WO 2004-DK558 23 Aug 2004
PRIORITY INFO: DK 2003-1201 22 Aug 2003; DK 2003-1201 22 Aug 2003

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DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2005-202646 [21]

AB DERWENT ABSTRACT:

NOVELTY - Producing (M1) a variant polypeptide, by superimposing three-dimensional model of fungal alpha-amylase and for maltogenic alpha-amylase, selecting amino acid residue in fungal amylase with C-alpha atom located greater than 0.8Angstrom from C-alpha atom of amino acid residue in maltogenic alpha-amylase and less than 11Angstrom from atom of enzyme substrate, altering the fungal amylase sequence, and producing the polypeptide having resulting amino acid sequence.

DETAILED DESCRIPTION - Producing (M1) a variant polypeptide, involves providing an amino acid sequence and a three-dimensional model for a fungal alpha-amylase and for maltogenic alpha-amylase, where one or both models includes a substrate, superimposing the two three-dimensional models, selecting an amino acid residue in the fungal amylase which has C-alpha atom located greater than 0.8Angstrom from the C-alpha atom of any amino acid residue in the maltogenic alpha-amylase and less than 11Angstrom from an atom of a substrate, altering the fungal amylase sequence, where the alteration includes substitution or deletion of the selected residue or by insertion of a residue adjacent to the selected residue, and producing the polypeptide having the resulting amino acid sequence. An INDEPENDENT CLAIM is also included for a polypeptide (I) comprising (a) an amino acid sequence having at least 70% identity to a fully defined 478 amino acids (SEQ ID No:2) sequence given in the specification, and compared to SEQ ID No:2 comprises an amino acid alteration which is a deletion, substitution or insertion at a position corresponding to 15, 32-36, 63-64, 73-77, 119-120, 125-126, 151-152, 155-156, 167-172, 211 or 233-239, and has the ability to hydrolyze starch, (b) has an amino acid sequence having at least 70% identity to a fully defined 476 amino acids (SEQ ID No:3) sequence given in the specification, compared to SEQ ID No:3 comprises an amino acid alteration which comprises Q35K, Q35R, P70K, L151F, L151D, N233G+G234D, D75G, D75A or 166-171 (Glu-Gly-Asp-Thr-Ile-Val) substituted with Phe-Thr-Asp-Pro-Ala-Gly-Phe, and has the ability to hydrolyze starch, or (c) has an amino acid sequence having at least 70% identity to a fully defined 475 amino acids (SEQ ID No:4) sequence given in the specification, compared to SEQ ID No:4 comprises an amino acid alteration which comprises G35K, G35R, A76deletion+D77deletion, D74deletion+A78deletion, D74A, D74G, D77A, D77G, Y157W or L168F+A169T+T171P+P172A+T173G, and has the ability to hydrolyze starch.

BIOTECHNOLOGY - Preferred Method: In (M1), the substitution or insertion is made with an amino acid residue of the same type as the corresponding residue in the maltogenic alpha-amylase sequence, where the type is positively charged, negatively charged, hydrophilic or hydrophobic. The substitution or insertion is made with a larger or smaller amino acid residue depending on whether the corresponding residue in the maltogenic alpha-amylase sequence is larger or smaller. The alteration of the amino acid sequence further comprises substitution of a fungal alpha-amylase residue which has a C-alpha atom located less than 11Angstrom from an atom of a substrate and less than 0.8Angstrom from the C-alpha atom of a maltogenic alpha-amylase residue. The substitution is made with an amino acid residue of the same type as the corresponding maltogenic alpha-amylase residue, where the type is positive, negative, hydrophilic or hydrophobic. Preferred Polypeptide: In (I), the alteration corresponding to Q35K/R, Y75A/F, Y155W, L166F, G167T, N169P, T170A, L232Y, D233G, G234D, Y252F, Y256T, 166Leu-Gly-Asp-Asn-Thr-Val171 to Phe-Thr-Asp-Pro-Ala-Gly-Phe, 168-171 (Asp-Asn-Thr-Val) substituted with Asp-Pro-Ala-Gly-Phe, 168-171 (Asp-Asn-Thr-Val) substituted with Asp-Pro-Ala-Gly-Leu, 168-171 (Asp-Asn-Thr-Val) substituted with Asp-Pro-Ala-Gly-Cys, D233G+G234D, Q35K+Y75F+D168Y, Q35R+Y75F, Q35R+Y75F+D168Y, 168-171 (Asp-Asn-Thr-Val) substituted with Asp-Pro-Ala-Gly-Phe+Y75A, 168-171 (Asp-Asn-Thr-Val)

substituted with Asp-Pro-Ala-Gly-Phe+Q35K+Y75A, 168-171 (Asp-Asn-Thr-Val) substituted with Asp-Pro-Ala-Gly-Phe+Q35K+Y75A+D233G+G234D, 168-171 (Asp-Asn-Thr-Val) substituted with Asp-Pro-Ala-Gly-Phe+Y75A+G234D, 168-171 (Asp-Asn-Thr-Val) substituted with Asp-Pro-Ala-Gly-Phe+Y75A+D233G+G234D, 166-171 (Leu-Gly-Asp-Asn-Thr-Val) substituted with Phe-Thr-Asp-Pro-Ala-Gly-Phe+Y75A, 166-171 (Leu-Gly-Asp-Asn-Thr-Val) substituted with Phe-Thr-Asp-Pro-Ala-Gly-Phe+Q35K+Y75A and 166-171 (Leu-Gly-Asp-Asn-Thr-Val) substituted with Phe-Thr-Asp-Pro-Ala-Gly-Phe+Q35K+Y75A+D233G+G234D.

USE - (M1) is useful for producing a variant polypeptide. The polypeptide produced by (M1) is useful for preparing a dough or a baked from dough product (all claimed). The polypeptide of (M1) is useful for anti-staling in baked products.

ADVANTAGE - The variant polypeptide has improved anti-staling effect and higher degree of exo-amylase activity. (26 pages)

L11 ANSWER 2 OF 4 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN

ACCESSION NUMBER: 2005-04822 BIOTECHDS

TITLE: Producing soluble starch hydrolysate comprises subjecting aqueous granular starch slurry below initial gelatinization temperature of granular starch to action of Glycoside Hydrolase Family13 enzyme, and fungal amylase; fungus alpha-amylase, beta-amylase or glucoamylase-catalyzed starch hydrolysis for use in high fructose starch-based syrup, ethanol or sweetener production

AUTHOR: VIKSOE-NIELSEN A; ANDERSEN C; PEDERSEN S; HJORT C

PATENT ASSIGNEE: NOVOZYMES AS

PATENT INFO: WO 2004113551 29 Dec 2004

APPLICATION INFO: WO 2004-DK456 25 Jun 2004

PRIORITY INFO: DK 2003-1568 24 Oct 2003; DK 2003-949 25 Jun 2003

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: WPI: 2005-075255 [08]

AB DERWENT ABSTRACT:

NOVELTY - Producing (M1) soluble starch hydrolysate, by subjecting aqueous granular starch slurry to action of first and second enzyme, where first enzyme is member of Glycoside Hydrolase Family13, having alpha-1,4-glucosidic hydrolysis activity and comprising functional carbohydrate-binding module; and second enzyme is a fungal alpha-amylase, beta-amylase or glucoamylase.

DETAILED DESCRIPTION - Producing (M1) a soluble starch hydrolysate, involves subjecting an aqueous granular starch slurry at a temperature below the initial gelatinization temperature of the granular starch to the action of a first enzyme and a second enzyme, where the first enzyme is a member of the Glycoside Hydrolase Family13, has alpha-1,4-glucosidic hydrolysis activity, and comprises a functional carbohydrate-binding module (CBM) belonging to CBM Family 20 having an amino acid sequence having at least 60% homology to a fully defined sequence of 102, 99 or 102 amino acids (S1) as given in the specification, and where the second enzyme is chosen from a fungal alpha-amylase (EC 3.2.1.1), beta-amylase (E.C. 3.2.1.2), and a glucoamylase (E.C. 3.2.1.3). INDEPENDENT CLAIMS are also included for the following: (1) a process (M2) for production of high fructose starch-based syrup (HFSS), where a soluble starch hydrolysate produced by (M1) is subjected to conversion into HFSS, such as high fructose corn syrup (HFCS); (2) process (M3) for production of a fermentation product, where a soluble starch hydrolysate produced by (M1) is subjected to fermentation into a fermentation product, such as citric acid, monosodium glutamate, gluconic acid, sodium gluconate, calcium gluconate, potassium gluconate, glucono delta lactone, sodium erythorbate, itaconic acid, lactic acid, gluconic acid, ketones, amino acids, glutamic acid (sodium monoglutamate), penicillin, tetracycline, enzymes, vitamins, such as riboflavin, B12, beta-carotene or hormones; (3) a process (M4) for production of fuel or potable ethanol, where a soluble starch hydrolysate produced by (M1) is

subjected to fermentation into ethanol; (4) use of an enzyme (I) having alpha-amylase activity in a process for hydrolysis of starch, the enzyme comprising a functional CBM having an amino acid sequence having at least 60% homology to (S1), or an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, 98%, such as at least 99% homology to an amino acid sequence chosen from a fully defined sequence of 619, 613, 619 and 640 amino acids (S2) as given in the specification; and (5) use of an enzyme having alpha-amylase activity in a process for hydrolysis of granular starch, the enzyme comprising an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, 98%, such as at least 99% homology to an amino acid sequence chosen from a fully defined sequence of 484, 485, 484, 517, 550, 482, 482, 482, 483, 483, 485, 484, 485 amino acids (S3) as given in the specification.

BIOTECHNOLOGY - Preferred Method: In (M1), the alpha-amylase comprises a functional CBM having at least 55%, 60%, 65%, 70%, 75%, 80%, 85%, 90%, 95%, 98%, such as at least 99% homology to (S1) or an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, 98%, such as at least 99% homology to (S2) or (S3). The starch slurry has 20-55% dry solids granular starch, preferably 25-40% dry solids granular starch, more preferably 30-35% dry solids, especially around 33% dry solids granular starch. In (M1), at least 85-98%, preferably 99% of the dry solids of the granular starch are converted into a soluble starch hydrolysate. (M1) involves subjecting the granular starch slurry to the action of an isoamylase and/or pullulanase. The temperature is at least 58 degrees C, 59 degrees C, preferably 60 degrees C. The pH is 3.0-7.0, preferably 3.5-6.0, more preferably 4.0-5.0. The soluble starch hydrolysate has a DX of at least 94.5%, 95.0%, 95.5%, 96.0%, 96.5%, 97.0%, 97.5%, 98.0%, 98.5%, 99.0% or at least 99.5%. (M1) is conducted in an ultrafiltration system, or in a continuous membrane reactor with ultrafiltration or microfiltration membranes, and where the retentate is held under recirculation in presence of enzymes, raw starch and water, where the permeate is the soluble starch hydrolysate. (M1-M4) are conducted in an ultrafiltration system or in a continuous membrane reactor with ultrafiltration membranes, where the retentate is held under recirculation in the presence of enzymes, raw starch, yeast, yeast nutrients and water and the permeate is an ethanol containing liquid. The starch slurry is being contacted with a polypeptide comprising a CBM, but no catalytic module, that is a loose CBM. In (M4), the fermentation step is carried out simultaneously or separately/sequential to the hydrolysis of the granular starch. Preferred Components: The granular starch is obtained from tubers, roots, stems, whole grain, cereals, corn, cobs, wheat, barley, rye, milo, sago, cassava, tapioca, sorghum, rice or potatoes, or from dry milling of whole grain, wet milling of whole grain, or milled corn grits

USE - (M1) is useful for producing a soluble starch hydrolysate which is useful for production of high fructose starch-based syrup (HFSS), a fermentation product, fuel or potable ethanol. (I) is useful for hydrolysis of granular starch (claimed). The hydrolysates are useful as sweeteners or as precursors for other saccharides, such as fructose.

EXAMPLE - A slurry with 33% dry solids (DS) granular starch was prepared by adding 247.5 g of wheat starch under stirring to 502.5 ml of water. The pH was adjusted with HCl to 4.5. The granular starch slurry was distributed to 100 ml blue cap flasks with 75 g in each flask. The flasks were incubated with magnetic stirring in a 60 degrees C water bath. At zero hours the enzyme activities were dosed to the flasks. Samples were withdrawn after 24, 48, 72, and 96 hours. The starch was completely hydrolyzed by adding an excess amount of alpha-amylase (300 KNU/Kg dry solids) and placing the sample in an oil bath at 95 degrees C for 45 minutes. Subsequently the samples were cooled to 60 degrees C and an excess amount of glucoamylase (600 AGU/kg DS) was added followed by incubation for 2 hours at 60 degrees C. Soluble dry solids in the starch hydrolysate were determined by refractive index measurement on samples after filtering through a 0.22 microM filter. The sugar profile was determined by HPLC. The amount of glucose was calculated as DX. The

amount of the soluble hydrolysate obtained after 24, 48, 72 and 96 hours were 88.4, 92.4, 93.7 and 95.3, respectively. (68 pages)

L11 ANSWER 3 OF 4 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2003-04043 BIOTECHDS

TITLE: Production of fermentation product, e.g. ethanol, involves carrying out a fermentation step with at least one carbohydrate-source generating enzyme activity and at least one alpha-amylase activity; with use of *Bacillus stearothermophilus*, *Aspergillus niger*, *Talaromyces emersonii* or *Rhizomucor miehei* alpha-amylase

AUTHOR: OLSEN H S; PEDERSEN S; BECKERICH R; VEIT C; FELBY C

PATENT ASSIGNEE: NOVOZYMES AS; NOVOZYMES NORTH AMERICA INC

PATENT INFO: WO 2002074895 26 Sep 2002

APPLICATION INFO: WO 2002-DK179 19 Mar 2002

PRIORITY INFO: US 2001-304380 10 Jul 2001; US 2001-277383 19 Mar 2001

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: WPI: 2002-723447 [78]

AB DERWENT ABSTRACT:

NOVELTY - A fermentation product is produced by carrying out a fermentation step in the presence of at least one carbohydrate-source generating enzyme activity and at least one alpha-amylase activity.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following: (a) A composition comprising: (i) carbohydrate-source generating enzyme activity; (ii) alpha-amylase activity, protease activity; and (iii) debranching enzyme activity; and (b) Use of the composition for saccharification and/or fermentation, for ethanol production or for beer or wine production.

BIOTECHNOLOGY - Preferred Component: The carbohydrate-source generating enzyme is a glucoamylase particularly derived from *Aspergillus niger* or *Talaromyces emersonii*, beta-amylase particularly derived from barley or a maltogenic amylase particularly derived from *Bacillus stearothermophilus*. The alpha-amylase is an acid alpha-amylase, particularly an acid fungal alpha-amylase, e.g. an acid fungal alpha-amylase derived from *A. niger* or *A. oryzae*. The ratio between the acid fungal alpha-amylase activity (AFAU) per glucoamylase activity (AGU) (AFAU per AU) is at least 0.1 (particularly at least 0.16), preferably 0.12-0.3. The protease is an acid protease, particularly an acid fungal protease, e.g. an acid fungal protease derived from a strain of *Aspergillus* (particularly *A. niger* or *A. oryzae*) or a strain of *Rhizomucor* (particularly *R. miehei*) or a bacterial protease, e.g. acid, neutral or alkaline protease, (e.g., a protease derived from a strain of *Bacillus*) particularly ALCALASE or NEUTRASE. The debranching enzyme is an isoamylase (E.C. 3.2.1.68) or pullulanase (E.C. 3.2.1.41), particularly a pullulanase derived from *Bacillus* sp., e.g. a strain of *B. deramificans*, *B. acidopullulyticus* or *B. naganoensis*. The glucoamylase/pullulanase ratio determined as AGU/PUN is 5:1-1:5. The micro-organism is a yeast, e.g. a yeast belonging to *Saccharomyces* spp. (particularly *Saccharomyces cerevisiae*). The material to be fermented is a liquefied whole grain mash or a side stream from starch processing, particularly liquefied starch with a DE of 8-10. The yeast cell wall degrading enzyme is a preparation, e.g. the product GLUCANEX (RTM: enzyme) derived from *Trichoderma harzianum*.

USE - The inventive process is used for producing a fermentation product, preferably ethanol, beer or wine. The produced ethanol can be used as fuel ethanol, drinking ethanol (i.e., potable neutral spirits) or industrial alcohol. The grain, a left-over from the fermentation or distillation steps, is typically used for animal feed either in liquid or dried form.

ADVANTAGE - The inventive method results in increased fermentation rate and ethanol yield.

EXAMPLE - Washed yeast (2.5 g) was suspended in ion-exchanged water (100 mL) at room temperature. The suspension was stirred on a magnetic stirrer for 15 minutes. Samples (15 mL) were transferred to centrifuge tubes with volume indication. Sodium chloride (NaCl), calcium chloride (CaCl₂) and Rhizomucor miehei protease was added to create the solutions of 250 mM NaCl, 4 mM calcium chloride (CaCl₂) and 4 mM CaCl₂ and R. miehei protease. Incubation of the solutions was made at room temperature for 15 minutes in a rotary shaker, which turned the closed tubes end-over-end at 20 rpm. The tubes were left in vertical position for 60 minutes after which the volume of the sediment was measured. The results showed the effect of R. miehei protease on volume of sediment. For the solution containing 250 mM NaCl the volume of sediment was 0.165 mL, and for the solution containing 4 mM CaCl₂ the volume of sediment was 0.245 mL and for the solution containing 4 mM CaCl₂ and R. miehei protease the volume of sediment was 0.194 mL. (38 pages)

L11 ANSWER 4 OF 4 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2000417503 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10924103
TITLE: Structural analysis of a chimeric bacterial alpha-amylase.
High-resolution analysis of native and ligand complexes.
AUTHOR: Brzozowski A M; Lawson D M; Turkenburg J P;
Bisgaard-Frantzen H; Svendsen A; Borchert T V;
Dauter Z; Wilson K S; Davies G J
CORPORATE SOURCE: Department of Chemistry, Structural Biology Laboratory,
University of York, Heslington, UK.
SOURCE: Biochemistry, (2000 Aug 8) 39 (31) 9099-107.
Journal code: 0370623. ISSN: 0006-2960.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: PDB-1E3X; PDB-1E3Z; PDB-1E43; PDB-1E4PHI
ENTRY MONTH: 200009
ENTRY DATE: Entered STN: 20000915
Last Updated on STN: 20000922
Entered Medline: 20000907

AB Several chimeric alpha-amylases genes were constructed by an in vivo recombination technique from the *Bacillus amyloliquefaciens* and *Bacillus licheniformis* genes. One of the fusion amylases (hereafter BA2), consisting of residues 1-300 from *B. amyloliquefaciens* and 301-483 from *B. licheniformis*, has been extensively studied by X-ray crystallography at resolutions between 2.2 and 1.7 Å. The 3-dimensional structure of the native enzyme was solved by multiple isomorphous replacement, and refined at a resolution of 1.7 Å. It consists of 483 amino acids, organized similarly to the known *B. licheniformis* alpha-amylase structure [Machius et al. (1995) J. Mol. Biol. 246, 545-559], but features 4 bound calcium ions. Two of these form part of a linear cluster of three ions, the central ion being attributed to sodium. This cluster lies at the junction of the A and B domains with one calcium of the cluster structurally equivalent to the major Ca(2+) binding site of fungal alpha-amylases. The third calcium ion is found at the interface of the A and C domains. BA2 contains a fourth calcium site, not observed in the *B. licheniformis* alpha-amylase structure. It is found on the C domain where it bridges the two beta-sheets. Three acid residues (Glu261, Asp328, and Asp231) form an active site similar to that seen in other amylases. In the presence of TRIS buffer, a single molecule of TRIS occupies the -1 subsite of the enzyme where it is coordinated by the three active-center carboxylates. Kinetic data reveal that BA2 displays properties intermediate to those of its parents. Data for crystals soaked in maltooligosaccharides reveal the presence of a maltotriose binding site on the N-terminal face of the (beta/alpha)(8) barrel of the molecule, not previously described for any alpha-amylase structure, the biological function of which is unclear. Data for a complex soaked with the

tetrosaccharide inhibitor acarbose, at 1.9 Å, reveal a decasaccharide moiety, spanning the -7 to +3 subsites of the enzyme. The unambiguous presence of three unsaturated rings in the (2)H(3) half-chair/(2)E envelope conformation, adjacent to three 6-deoxypyranose units, clearly demonstrates synthesis of this acarbose-derived decasaccharide by a two-step transglycosylation mechanism.

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(FILE 'HOME' ENTERED AT 10:24:31 ON 12 JAN 2006)

FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS, LIFESCI' ENTERED AT 10:25:20 ON 12 JAN 2006

L1 53363 S ALPHA (W) AMYLASE?
L2 352188 S FUNGAMYL OR FUNGAL
L3 585 S L1(A)L2
L4 140 S (THREMOSTABILITY OR STABILITY OR "PH") AND L3
L5 92 DUP REM L4 (48 DUPLICATES REMOVED)
E BISGARD H/AU
E BISGARD-FRANTZEN H/AU
E FRANTZEN HENRIK/AU
L6 3 S E4
E SVENDSEN A/AU
L7 412 S E3
E PEDERSEN S/AU
L8 1382 S E3
L9 1795 S L6 OR L7 OR L8
L10 7 S L3 AND L9
L11 4 DUP REM L10 (3 DUPLICATES REMOVED)

	Issue Date	Page s	Document ID	Title
1	20060105	57	US 20060003408 A1	Acid-stable alpha amylases having granular starch hydrolyzing activity and enzyme compositions
2	20051201	50	US 20050266543 A1	Heterologous expression of an Aspergillus kawachi acid-stable alpha amylase and applications in granular starch hydrolysis
3	20051124	21	US 20050260719 A1	Method of producing saccharide preparations
4	20051006	11	US 20050220951 A1	Ethanol extraction of phytosterols from corn fiber
5	20050811	6	US 20050176120 A1	Method for the production of lactic acid or a salt thereof by simultaneous saccharification and fermentation of starch
6	20050721	63	US 20050158839 A1	Hybrid enzymes
7	20050623	60	US 20050136525 A1	Expression of granular starch hydrolyzing enzymes in Trichoderma and process for producing glucose from granular starch substrates
8	20050616	14	US 20050129806 A1	Coated products containing hydrogenated indigestible starch syrup as a binding agent

9	20050519	20	US 2005010733 2 A1	Starch process
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	L #	Hits	Search Text
1	L1	8963	alpha adj amylase\$2
2	L2	5020 2	fungamy or fungal
3	L3	5022 9	fungamyl or fungal
4	L4	1002	11 same 13
5	L5	4699 94	thremostabl\$3 or "pH"
6	L6	117	14 same 15
7	L7	1176 9	SVENDSEN BISGARD PEDERSEN
8	L8	10	16 and 17

	Issue Date	Page s	Document ID	Title
10	20050310	60	US 2005005407 1 A1	Enzymes for starch processing
11	20050303	40	US 2005004861 1 A1	Polypeptides having alpha-amylase activity and polypeptides encoding same
12	20050224	38	US 2005004273 7 A1	Starch process
13	20041118	17	US 2004022976 4 A1	Fungamyl-like alpha-amylase variants
14	20040513	9	US 2004009160 1 A1	Liquid yeast compositions
15	20040401	17	US 2004006318 4 A1	Fermentation processes and compositions
16	20040325	22	US 2004005805 2 A1	Products comprising corn oil and corn meal obtained from high oil corn
17	20040325	9	US 2004005805 1 A1	Enzymatic process for generation of foods, feedstuffs and ingredients therefor
18	20040304	66	US 2004004408 7 A1	Use of hop acids in fuel ethanol production
19	20040205	13	US 2004002334 9 A1	Processes for making ethanol
20	20031204	23	US 2003022449 6 A1	Method of producing fermentation-based products from corn
21	20031009	8	US 2003019039 9 A1	Liquid bread improving compositions

22	20031009	13	US 2003019038 7 A1	Coated products containing hydrogenated indigestible starch syrup as a binding agent
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	Issue Date	Page s	Document ID	Title
23	20030703	6	US 2003012422 4 A1	Process for the production of enzyme granules
24	20030501	25	US 2003008351 2 A1	Corn oil processing and products comprising corn oil and corn meal obtained from corn
25	20021219	22	US 2002019361 7 A1	Products comprising corn oil and corn meal obtained from high oil corn
26	20021219	6	US 2002019229 1 A1	Amylose products as matrix former for programmed release systems, process for preparing these amylose products, and process for making programmed release systems
27	20021107	23	US 2002016472 3 A1	Method of producing saccharide preparations
28	20020627	19	US 2002008217 8 A1	Thickened hard surface cleaner
29	20020627	10	US 2002008136 7 A1	NON-DAIRY, READY-TO-USE MILK SUBSTITUTE, AND PRODUCTS MADE THEREWITH
30	20020516	7	US 2002005808 6 A1	Methods and compositions for retarding the staling of baked goods
31	20020314	14	US 2002003213 1 A1	Malodor counteractant compositions and methods for preparing and using same
32	20020110	9	US 2002000408 4 A1	DRY BAKERY PRODUCTS AND A PROCESS FOR THEIR PREPARATION

	Issue Date	Page s	Document ID	Title
33	20050816	25	US 6929940 B1	Polynucleotides encoding oxalate decarboxylase from <i>Aspergillus niger</i> and methods of use
34	20050315	12	US 6866876 B2	Coated chewing gum products containing hydrogenated indigestible starch syrup as a binding agent
35	20050118	6	US 6844172 B2	Amylose products as matrix former for programmed release systems, process for preparing these amylose products, and process for making programmed release systems
36	20031118	9	US 6649197 B2	Dry bakery products and a process for their preparation
37	20031118	34	US 6649191 B1	Orally administrable compositions comprising cation cross-linked polysaccharide and a polymer digestible in the lower gastrointestinal tract
38	20031118	19	US 6648930 B2	Products comprising corn oil and corn meal obtained from high oil corn
39	20031021	7	US 6635289 B2	Methods and compositions for retarding the staling of baked goods
40	20031007	15	US 6630434 B2	Thickened hard surface cleaner

41	20030826	22	US 6610867 B2	Corn oil processing and products comprising corn oil and corn meal obtained from corn
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43	20030401	15	US 6541443 B1	Multifunctional detergent materials
44	20021119	21	US 6482942 B1	Method of isolating mucilaginous polysaccharides and uses thereof
45	20020917	9	US 6451369 B1	Non-dairy, ready-to-use milk substitute, and products made therewith
46	20020813	12	US 6432891 B1	Malodor counteractant compositions and methods for preparing and using same
47	20020423	5	US 6376219 B1	Amylose products as matrix former for programmed release systems, process for preparing these amylose products, and process for making programmed release systems
48	20011016	19	US 6303346 B1	Method of producing saccharide preparations
49	20010731	15	US 6268324 B1	Thickened hard surface cleaner
50	20010313	17	US 6200944 B1	Bleach precursor compositions
51	20010220	7	US 6190708 B1	Enzyme preparations for modifying cereal suspensions
52	20001024	15	US 6136571 A	Method of producing saccharide preparations
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56	20000215	14	US 6025168 A	Method for the production of isomalto-oligosaccharide rich syrups
57	19991228	22	US 6008178 A	Detergent composition comprising cationic ester surfactant and protease enzyme
58	19991005	6	US 5962276 A	Purified acid-stable alpha-amylase from fungal origin
59	19981110	9	US 5833757 A	Process for conversion of bananas to sugar syrup
60	19980630	4	US 5773055 A	Process for preparing a bean flavor
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63	19971014	36	US 5677474 A	Producing commercially valuable polypeptides with genetically transformed endosperm tissue
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68	19951205	13	US 5472861 A	Method for preparing immobilized enzyme conjugates and immobilized enzyme conjugates prepared thereby
69	19950919	5	US 5451413 A	Yeast derivative and method to improve bread quality
70	19950725	17	US 5436019 A	Method of preparing reduced fat foods
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75	19921208	6	US 5169771 A	Method for making a sedimentation resistant stable enzyme dispersion
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82	19891024	6	US 4876096 A	Rice syrup sweetener
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84	19890321	6	US 4814267 A	Method for preparing high conversion syrups and other sweeteners
85	19880712	6	US 4756912 A	Rice syrup sweetener production
86	19880517	8	US 4744992 A	Nutritional rice milk production
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8	20011016	19	US 6303346 B1	Method of producing saccharide preparations
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